

**PRE-SERVICE TEACHERS' ATTITUDES, CONCERNS AND SENTIMENTS
ABOUT INCLUSIVE EDUCATION: AN INTERNATIONAL COMPARISON OF
NOVICE PRE-SERVICE TEACHERS**

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This study investigates the nature of concerns and attitudes held by pre-service teachers regarding inclusive education and their degree of comfort on interaction with people with disabilities. Pre-service training may be the optimal time to address educators' concerns and alter any negative attitudes about inclusive education. This paper reports the perceptions of pre-service teachers prior to their involvement in units of work focusing specifically on inclusive education in universities located in Australia, Canada, Hong Kong, and Singapore. Results indicate significant differences exist between the students in the eastern countries of Singapore and Hong Kong, and those in the western countries of Canada and Australia. Participants in the Western countries tended to have more positive sentiments and attitudes towards students with disabilities, and more concerns than their Eastern counterparts. The study also suggests that in most instances pre-service teachers have more positive attitudes towards people with disabilities and inclusion, and more confidence in implementing inclusive practice when they have had additional training and / or experience with people with disabilities.

Inclusion is an educational practice based on a notion of social justice that advocates access to equal educational opportunities for all students regardless of the presence of a disability. Inclusion involves students with disabilities learning with their peers in regular schools that adapt and change the way they work in order to meet the needs of all students (Foreman, 2001; Loreman & Deppeler, 2001; Sailor & Skrtic, 1995). Inclusion requires commitment from a range of stakeholders including governments, teacher training institutions, schools, teachers, and the school community if it is to be successful. As we move towards an inclusive future it is teacher training institutions that will become pivotal in ensuring teachers have the appropriate attitudes and skills to further this agenda.

Preparing teachers for regular class teaching has undergone a major pedagogical shift in recent years. Training institutions are now required to ensure that pre-service teachers are competent to cater for the needs of an increasing range of diverse learners. This move has been furthered by international recommendations (now more than 12 years old) from UNESCO to include content on inclusion as part of teacher training programs (UNESCO,

1994). In preparing teachers for inclusive classrooms their attitudes, beliefs, expectations and acceptance of people with diverse needs may well be challenged.

Although this is such an important area, limited international studies have been carried out to understand pre-service teachers' concerns and preparedness for teaching diverse learners (see Forlin, Douglas, & Hattie, 1996; Forlin, 2001; Forlin, Jobling, & Carroll, 2001; Loreman, 2002; Sharma, Ee, & Desai, 2003). Indeed, this was also highlighted by the Salamanca Statement that emphasized a need for collaboration and networking amongst member nations in research and teaching on inclusive education. Research examining attitudes and similar constructs (e.g. concerns about implementing inclusion, and sentiments towards persons with disabilities) within an international framework may shed lights on role of factors that are context specific (example policy/legislative framework or cultural context). This may have useful implications both for teacher trainers as well as policy makers.

The importance of having positive attitudes toward inclusive education amongst in-service educators has been long recognized. If educators hold positive attitudes towards inclusive education it may allow and encourage practices that will guarantee, to a large extent, successful inclusion of all students (Hobbs & Westling, 1998; Wilczenski, 1992, 1995). Highlighting the need for positive attitudes Murphy (1996) states that if teachers leave from university with negative attitudes then those attitudes are difficult to change. Positive attitudes can be and need to be fostered through both training and positive experiences with students with disabilities (Hobbs & Westling, 1998). Specific studies investigating the concerns of educators and in particular pre-service teachers' concerns about inclusive education and their degree of comfort with persons with disabilities, though, are limited. Yet pre-service training may be the best time to address educators' concerns and possibly modify their negative attitudes about inclusive education as well as toward persons with disabilities.

This study is the second in a series of studies from a range of international perspectives (see also Loreman, Sharma, Forlin & Earle, 2005), that report on the attitudes, concerns and sentiments of teachers in training who are preparing to teach in regular schools. This study reports data prior to pre-service teachers having any exposure to university training on special education. The aims of this research are to identify pre-service teachers' concerns, attitudes towards persons with disabilities and levels of discomfort in interacting with people with a disability prior to involvement in training for inclusive education; to identify demographic variables that may account for differences in attitudes; and to determine whether attitudes towards inclusive education differ significantly in a sample of international programs (Western Australia; Victoria, Australia; Hong Kong; Singapore; and Alberta, Canada).

Background

In order to understand the context of the study a description of pre-service teacher education in each of the selected countries is necessary. The description that follows also provides information about some of the key legislation and/ or policies in each country that have direct relevance to the education of students with disabilities.

Australia

Pre-service teacher education in Australia, involves more than 400 programs across 36 universities that serve the needs of approximately 35 000 students (Louden Rohl, Gore, Greaves, McIntosh, Wright, Siemon, & House, 2005). Each training institution prepares teachers for one of eight different Departments of Education, some of which require teacher registration in order to be employed (eg. Queensland, Western Australia, and New South Wales). Most jurisdictions rely on each institution making their own decision about the content of their courses (Carroll, Forlin, & Jobling, 2003). For a significant number of newly graduated pre-service teachers, though, they report that on completion they do not have the necessary skills to meet the diverse needs they face in their classrooms (Cambourne, 2002). While training institutions are increasingly updating their content, a review of 73 pre-service

teacher training courses offered by 16 universities across Australia in 2002, highlighted the relatively small number (45.5%) that included compulsory units of work on special or inclusive education (Loreman, 2002).

In addition, many national and state reports in Australia have referred to the insufficiency of training to prepare teachers to successfully include children with disabilities in regular classes. This lack of appropriate training has repeatedly been seen as a barrier to establishing more inclusive classrooms (e.g. Andrews, Elkins, Berry & Burge, 1979; Beazley 1984; Gow, Ward, Balla, & Snow, 1988; *Inquiry into the Education of Students with Disabilities*, SEETRC, 2002; *Ministerial Advisory Council on the quality of teaching*, 1997; *National inquiry into rural and remote education*, 2000; Shean, 1993, among others).

The enactment of Federal Legislation in the form of the Disability Discrimination Act (1992) and the release of the standards for education under the Act (draft, 2004) are ensuring that children with disabilities have greater opportunities to enroll in their local schools. It is posited by the government that the standards will:

... clarify the obligations of education and training service providers under the DDA, and the rights of people with disabilities in relation to education and training. The Standards will apply to all students with disabilities in all sectors of education and training in both public and non-Government educational institutions (retrieved 31.1.2005, <http://www.ag.gov.au/DSFE>).

Educational authorities and in particular regular class teachers are now required to support students with disabilities to ensure they are able to access the curriculum. Regular classrooms in Australia contain students with a range of diverse needs, thus it is essential that teachers are prepared to accept the role of being an inclusive educator and have positive beliefs and attitudes towards this. As the new standards will also establish the obligations of teacher training providers there is a pressing need to identify the issues for current undergraduate teachers in order to ensure that these providers assist teachers in acquiring the required attitudes towards inclusion.

Western Australia

Pre-service teacher education courses are offered at three institutions in Western Australia (WA). Prior to 2005, there were no general registration requirements for teachers, however, at the start of the year a newly formed College of Teaching commenced which requires teacher registration for WA. As part of the legislated mandate they will *Confer and collaborate with employers and universities in relation to the standards of teaching education courses* (Retrieved 1.3.2005 from <http://www.collegeofteaching.wa.edu.au>). Although existing undergraduate teacher preparation courses in WA include a compulsory unit of work on educating children with diverse needs it remains to be seen what impact the College of Teaching will have on re-directing this focus, especially in the area of post-graduate teacher training where such units are not generally offered. A major review of educational services for students with disabilities in government schools in WA has also led to the Department of Education and Training being more focused on the need to better prepare teachers for inclusion (DET, 2004).

In the early 1990s in WA, the attitudes of teachers towards inclusion were being reported by both regular class teachers and those from Education Support Centres as being less than positive (Forlin, Douglas, & Hattie, 1996). Acceptance visibly decreased as perceptions of the severity of disability increased. The low levels of approval recorded by WA teachers at this time did not seem to auger well for a strong promise of inclusion. In 2004, the DET reported a loss of up to 27% of new teachers within ten years of graduation and that 70% of teachers reported that during their pre-service training they were *not much* or *not at all* prepared for understanding or implementing educational policies relating to inclusion (DET, 2004). The DET has initiated a number of policies in recent years along with a variety of strategies such

as the *Building Inclusive Schools* and *Building Inclusive Classrooms* strategies enacted in 2004 to support a stronger move towards inclusion. Any changes in the willingness of teachers to implement such policies and strategies remains to be determined.

Victoria, Australia

In Victoria, six universities offer pre-service teacher training programs. All teachers working in government, Catholic and independent schools in Victoria, are required by law to be registered with the Victorian Institute of Teaching (VIT). It is not a requirement of the VIT for registering teachers to have completed a unit in the area of special education. It is, therefore, not surprising to see that not many universities offer units in special education in undergraduate programs. However, the situation has changed slightly in last few years. While in some universities a unit in special education is mandatory (e.g. The University of Melbourne), other universities offer such a program as an elective unit (e.g. Monash University) in their pre-service teacher training programs. Anecdotal evidence indicates that while the number of students enrolling in special education programs is decreasing, the demand for a subject in special education in general education preparatory program has been increasing. This is very much in line with an increasing trend of inclusive education in Victoria. The number of students with disabilities attending regular schools has risen dramatically over last few years. For example, in 1985 only 500 students with disabilities attended regular schools compared to 5421 who attended special settings. In contrast in 2001, over 10,500 such students attended regular schools compared to 5,761 who attended special schools (DEET, 2001). It is, however, important to note that none of the six universities in Victoria, as in WA, offer a unit in special education at graduate or post-graduate level teacher training programs.

Canada

The practice of inclusive education in Canada varies considerably from region to region, with some regions actively supporting, and indeed mandating the approach, and others doing little to encourage the practice (Hutchinson 2002; Raymond & Loreman, 2005). The responsibility for education in Canada is primarily delegated to the individual Provinces. While the Federal government does have some minimal involvement in education in a broad, national sense through Constitutional guarantees of non-discrimination (Government of Canada, 1982), it is the Provinces that oversee, maintain, and distribute funding to individual school districts (Hutchinson 2002; Raymond & Loreman, 2005). The Provinces, in cooperation with the federal government which provides some financial support, are also responsible for the administration of post-secondary education, which includes all teacher training institutions.

Alberta

Alberta Education sets broad provincial policy and curriculum which local school districts (governed by elected trustees) must then implement and follow. Teachers must also be registered to practice in Alberta by Alberta Education before they are permitted to teach in any non-charter school. To attain registration teachers must have demonstrated the attainment of a set of knowledge, skills and attributes (known as the KSAs) outlined by Alberta Education (Minister for Education, 1997). These criteria require Alberta teachers to be skilled at a basic level in inclusive practice and in teaching and assessing a diverse range of learners. According to the KSAs teachers

(must understand that) all students can learn, albeit at different rates and in different ways. They know how (including when and how to engage others) to identify students' different learning styles and ways students learn. They understand the need to respond to differences by creating multiple paths to learning for individuals and groups of students, including students with special learning needs... (Minister for Education, 1997, section 2e)

There are five institutions in Alberta offering pre-service teacher training, with . Concordia University College of Alberta (CUCA) offering a post-graduate teaching degree accepting

approximately 70 students per year. While the focus of the program is elementary (primary) education, graduates are registered to teach at any level from K-12. All courses in the program are mandatory for all students, and additional electives are not offered. CUCA does not offer courses specific to inclusive teaching in its pre-service programs, but rather attempts to infuse this practice and philosophy through all courses of study.

Provincially, the Alberta School Act (revised 2002) is the main piece of legislation addressing the actions of school authorities, individual schools, staff and students in Alberta. This Act is supplemented by Ministerial Order 015/2004, otherwise known as the Standards for Special Education. It is these standards which are intended to set the direction for matters related to special education in Alberta.

The Alberta Learning Standards for Special Education (2004) begins with the statement that *...educating students with special education needs in inclusive settings is the first placement option to be considered by school boards in consultation with parents and, when appropriate, students (p. 1).*

Given that local school districts have been aware of the Alberta Learning Standards for Special Education since September 2003, it might be expected that districts have moved towards more inclusive modes of education (Hutchinson, 2002). While this is true of some provincial school jurisdictions, it clearly is not always the case.

Hong Kong

Hong Kong has gradually taken steps to move towards a more inclusive society for its people with disabilities. As early as the 1970s, Hong Kong posited a motion through a White Paper known as *Integrating the Disabled into the Community: A United Effort*. This was the first government paper that proposed integrating children with disabilities into mainstream schools (White Paper, 1977, 4.2c). This idea, however, was not seriously considered by the general education sectors, for paradoxically during that period of time there was a great expansion of specialized and segregated services. Children with disabilities were by and large placed in segregated, categorically determined school facilities. Not until 1995 and following the direction of the Salamanca Statement (UNESCO, 1994), was the *Disability Discrimination Ordinance* (DDO) enacted and the Education Department in Hong Kong took a more serious approach by initiating a pilot project on integration (Crawford et al, 1999). In 2001, when the *DDO Code of Practice on Education* (2001) was announced, the Education and Manpower Bureau (formerly the Education Department) stipulated, through a government circular to all schools, that they were required to implement a whole school approach to catering for the special needs of students. (Government circular, 82/2003).

Preparing teachers in Hong Kong has undergone a major pedagogical shift in recent years. Teacher training institutions are now required to ensure that teachers are competent to cater for the needs of an increasing range of diverse learners. This includes preparing them to teach not only those with a disability, but to include those with learning difficulties and other differences such as culture, gender, sex orientation, socio-economic disadvantage etc. Not surprisingly, many teachers voice concerns regarding their support for and ability to be able to work in inclusive situations. It is deemed critical to ensure that teacher training institutions are preparing future teachers appropriately to face this challenging and the important task of catering for diversity in the mainstream classroom.

Singapore

Singapore is a small island of 3.5 million people (Ministry of Community Development, Youth and Sports; MCYS, 2004) and has become a model city state with over 40 years of independence. The education system in Singapore is of importance to ensure that Singapore continues to thrive in an increasingly competitive and technologically advanced global environment (Lim & Nam, 2000).

In contrast to Australia, Canada and Hong Kong, the participants from Singapore were training to teach in preschools. There are currently 14 special schools in Singapore of which eight schools cater for early intervention at a preschool level (National Council of Social Services, 2005). In addition to the National Institute of Education (NIE), teacher training for preschool teachers is offered by accredited private training centers. The Regional Training Center - Asia (RTRC Asia) (RTRC, 2005), the Association for Early Childhood Educators (Singapore) (AECES, 2005) and Singapore Institute of Management (SIM) are three out of 22 tertiary early childhood institutions accredited by the Preschool Qualification Accreditation Committee (PQAC) to teach certificate and diploma courses in preschool teaching.

Pre-service trainee teachers at the National Institute of Education (NIE) in Singapore were reported to have limited experience and limited opportunities towards relating to children with special needs unless they had a family member or relative with special needs (Lim & Tan, 2004). In the absence of any formal policy supporting inclusion (or integration as it is called in the country), only some students with disabilities like those with a single disability and those who are deemed fit for entrance into regular schools are admitted (Sharma, Ee, & Desai, 2003). The government provides extra resources to support to these students in the mainstream. Due to the social agenda, Singapore 21 (1999) outlined that each Singaporean person matters in contributing to the uniqueness of Singapore which goes beyond academic and economic success to accommodate the diverse ways people can contribute and feel valued by society.

Method

Participants

Participants were a purposeful sample of pre-service teachers enrolled in an undergraduate teacher preparation program at a teacher training institution in one of four international jurisdictions, namely, Western Australia; Victoria, Australia; Alberta, Canada; Hong Kong and Singapore. All pre-service teachers were preparing to teach in regular classrooms at preschool, primary or secondary level. All students except for those in Canada had enrolled in a unit of study focusing on catering for the needs of students with diverse abilities. Canadian students were in a program in which this content was infused throughout different areas of the program. A total of 1060 pre-service teachers participated in the study (Alberta=201; Western Australia =229; Victoria=63; Hong Kong=470; Singapore= 97). Given that the Australian data presented no significant differences between Western Australia and Victoria it has been combined for this report. Although we use country names in reporting the data we acknowledge that this may not be representative of wider views in these countries. Our data is based on one institution in each country only, and two in Australia.

Instrument

A four-part survey instrument was employed to collect data. Part One sought general demographic information about each participant. Part Two involved the *Attitudes Towards Inclusive Education* scale (ATIES) (Wilczenski, 1992). Part Three was a modified version of the *Interaction with Disabled Persons* scale (IDP) (Gething, 1991, 1994). Part Four employed the *Concerns About Inclusive Education Scale* (CIES) (Sharma & Desai, 2002).

Part 1: Demographic Information

Pre-service teachers were asked to provide information for seven variables including age, gender, contact with people with a disability, previous training, knowledge of disability act/policies and level of confidence in teaching students with disabilities.

Part 2: Attitudes Toward Inclusive Education Scale (ATIES)

Designed by Wilczenski in 1992, ATIES is a 16-item scale that measures participants' attitudes toward the four aspects of inclusion: social, physical, academic and behavioural. Each item on the scale is rated on a 6 point-Likert type classification ranging from 1 (strongly disagree), 2 (disagree), 3 (disagree somewhat), 4 (agree somewhat), 5 (agree) to 6 (strongly agree).

agree) The scale yields a total score the value of which ranges from 16 to 96, with higher scores indicating more favourable attitudes. ATIES has been frequently used by researchers and found to have adequate reliability and validity (e.g. Pasierb, 1994; Sharma, Ee & Desai, 2003; Wilczenski, 1995).

Part 3: The Interaction with Persons with a Disability (IPD) Scale

Confirmation of the original IDP (Interaction with Disabled Persons) Scale (Gething, 1991), was undertaken with 2850 pre-service teachers from six universities in Australia and South Africa (Forlin, Fogarty & Carroll, 1999). Following validation it was refined and renamed the *Interaction with People with a Disability* scale (IPD) (Forlin, Jobling & Carroll, 2001) to reflect a *people first* and more politically correct terminology. The IPD scale consists of 20 items employing a 6-point Likert scale. Pre-service teachers are asked to rank their level of discomfort when interacting with a person with a disability. Responses range from 1 (strongly disagree), 2 (disagree), 3 (disagree somewhat), 4 (agree somewhat), 5 (agree) to 6 (strongly agree). Higher scores on the IPD indicate greater levels of discomfort on interacting with people with disabilities.

Part 4: Concerns about Inclusive Education Scale (CIES)

The CIES (Sharma & Desai, 2002) measures participants' degree of concern about implementing inclusive education. The scale has 21 items. Each item was responded to on a 4-point Likert type classification with responses ranging from extremely concerned (4), very concerned (3), a little concerned (2) to not at all concerned (1). CIES also yields a total score which is obtained by adding the value of responses on each item. The value of total score may range from 21 to 84. A higher CIES score indicates that a respondent is more concerned about his or her ability to implement inclusion. Sharma and Desai (2002) addressed the validity of the scale through a panel of experts and the reliability coefficient for the scale is 0.91.

Procedure for Implementing the Questionnaire

Ethics clearance was obtained at each institution prior to commencing the research. The questionnaire was administered to pre-service teachers during the first week of a unit of study on teaching children with special needs. All pre-service teachers enrolled in these units were invited to participate in the study. The response rate was approximately 95% across all jurisdictions.

Statistical Testing of Results

All raw data was transformed by calculating the natural logarithm of the scores. This routine procedure was carried out in order that the data conform to the assumptions of the parametric statistical tests used for objective analysis of the results, including analysis of variance. A small number of data points were eliminated from the sample because of missing responses for both demographic and scores data resulting in variation of the sample size for different analyses..

Results

A large majority of participants in the study were female (75%) and younger than 29 years (83%). Approximately one third indicated having known a person with a disability as a family member or friend. The majority of participants indicated having average, poor or nil knowledge of disability Acts or policies that may impact on the education of such children in their jurisdiction. A similar trend was observed for the confidence variable as a large majority of participants in Australia (89%), Canada (81%) and Hong Kong (89%) indicated having *average, low, or very low* level of confidence in teaching students with disabilities.

Differences in pre-service teachers' attitudes towards inclusive education

In order to determine if the attitudes of participants differed in any predictable manner a one way ANOVA was employed followed by *post-hoc* testing to determine individual differences between any two countries. Table 1 presents data on participants' attitude scores organized by

country. The data below the diagonal represents the differences between ATIES scores of each pair of countries while the values above the diagonal represent the Bonferoni probabilities associated with the *post-hoc* tests of significance between each pair of countries. Mean ATIES scores for each country and the number of respondents comprising the sample are provided in brackets. Probabilities of less than 0.05 indicate a significant difference in the mean ATIES scores of the two countries being compared.

An examination of Table 1 reveals that in general Canadian pre-service teachers have the most positive attitudes followed by Australian teachers. Hong Kong and Singaporean pre-service teachers have the lowest mean attitude scores with no significant differences between them. The differences between Australia and Canada in comparison with Hong Kong and Singapore are all very highly significant (i.e. prob. < 0.001) as are the differences between Australia and Canada.

Table 1
Results of one-way analysis of variance comparing the mean ATIE scores of the three countries

COUNTRY (N=1049)	Australia $\bar{Y} = 65.99$	Canada $\bar{Y} = 74.47$	Hong Kong $\bar{Y} = 56.50$	Singapore $\bar{Y} = 58.40$
AUSTRALIA	-	<0.001	<0.001	<0.001
CANADA	4.487	-	<0.001	<0.001
HONG KONG	9.487	13.970	-	0.268
SINGAPORE	7.591	12.07	1.896	-

Differences in pre-service teachers' sentiments towards persons with disabilities.

A higher score on the IPD indicates a higher degree of discomfort towards people with disabilities. Once again Canadian pre-service teachers are on average found to have least discomfort regarding interacting with people with disabilities. Hong Kong and Australian teachers have a similar degree of discomfort. The differences are very highly significant for the following comparisons: Australia and Canada; Australia and Singapore; Canada and Hong Kong; and Canada and Singapore (see Table 2).

Table 2
Results of one-way analysis of variance comparing the mean IPD scores of the three countries

COUNTRY (N=996)	Australia $\bar{Y} = 68.17$	Canada $\bar{Y} = 64.05$	Hong Kong $\bar{Y} = 68.95$	Singapore $\bar{Y} = 72.00$
AUSTRALIA	-	<0.001	0.942	<0.001
CANADA	4.126	-	<0.001	<0.001
HONG KONG	0.778	4.905	-	0.002
SINGAPORE	3.826	7.953	3.048	-

Differences in pre-service teachers' concerns about inclusive education

A higher concern score indicates a greater degree of anxiety in implementing inclusive practices. Analysis of variance and subsequent *post-hoc* tests suggest a relatively low level of anxiety among Canadian and Australian pre-service teachers in contrast to the high level of concern expressed by their Hong Kong and Singaporean counterparts (see Table 3). An examination of their total mean scores on CIES indicated that Canadian educators were least concerned while those from Hong Kong were most concerned about including students with disabilities in their classrooms.

Table 3
Results of one-way analysis of variance comparing the mean CIES scores of the four countries

COUNTRY (N=1023)	Australia $\bar{Y} = 47.40$	Canada $\bar{Y} = 46.43$	Hong Kong $\bar{Y} = 56.41$	Singapore $\bar{Y} = 55.22$
AUSTRALIA	-	0.990	<0.001	<0.001
CANADA	0.972	-	<0.001	<0.001
HONG KONG	9.013	9.983	-	0.990
SINGAPORE	7.819	8.791	1.193	-

Relationship between knowledge of act/policies and ATIES, CIES and IPD scores.

Table 4 presents results in relation to proportion of the variance explained by differences between levels of knowledge of local legislation in three countries. As the table indicates, knowledge of the education act or policy in each country does appear to influence the sentiments (IPD) and attitudes (ATIES) of pre-service teachers. With regards to concerns related to inclusive education only Australian students appear to be influenced by the differences in the level of knowledge they have acquired. For the Singaporean students they were asked to refer to their knowledge of IDEA as Singapore does not have its own Act, consequently their knowledge base was very low for all students.

Table 4
Comparison of sentiments (IDP), attitudes (ATIES) and concerns (CIES) among respondents with varying knowledge (i.e. nil, poor, average, good and very good) of the education act in their respective countries. Singapore students were asked to respond if either they were familiar with the appropriate education act(s) in their country or not

COUNTRY	STATISTICS	IDP	ATIES	CIES
Australia	Mean \pm SD	68.17 \pm 9.8	65.99 \pm 10.1	47.40 \pm 10.1
	Probability	<0.001	0.039	0.054
	Variance Explained	7.1%	3.5%	3.3%
Canada	Mean \pm SD	64.05 \pm 9.1	70.47 \pm 10.9	46.43 \pm 10.0
	Probability	0.031	0.105	0.307
	Variance Explained	5.5%	3.8%	2.5%
Hong Kong	Mean \pm SD	68.95 \pm 8.3	56.50 \pm 10.0	56.41 \pm 9.5
	Probability	0.089	0.038	0.253
	Variance Explained	1.8%	2.2%	1.2%
Singapore	Mean \pm SD	72.00 \pm 8.66	58.40 \pm 8.93	55.22 \pm 11.06
	Probability	0.665	0.559	0.759
	Variance Explained	0.8%	1.1%	0.6%

Discussion

In this study we compared pre-service teachers' attitudes toward inclusive education, concerns about inclusive education, and sentiments towards persons with disabilities from Australia, Canada, Singapore and Hong Kong. Although the study reports on educators' perception from four countries, it does not suggest that results are generalizable to all pre-service teachers in these countries. Further, it must be remembered that these results indicate attitudes, concerns, and sentiments on entry to the educational institutions involved in the study. Therefore, this data does not reflect the attitudes, concerns and sentiments that are prevalent as the result of the education provided at the participating institutions.

Attitudes towards Inclusive Education

Several studies have investigated school educators' attitudes toward inclusive education (e.g., Forlin, 2004; 2003; Forlin, Jobling, & Carroll, 2001; Hobbs & Westling, 1998; Idol, 1997; Loreman, 2002; Subban & Sharma, 2006). It has been argued that attitudes can determine the day-to-day practices of classroom teachers. Notably, if educators have negative attitudes

toward inclusive education, they are less likely to implement strategies that consistently promote inclusive education. In this study we found that pre-service teachers from Canada were most positive and their counterparts from Hong Kong and Singapore were least positive about implementing inclusive education. Australian pre-service teachers were on average somewhere in the middle. One explanation for such positive attitudes within the cohort of Canadian educators is that all of them have had completed an undergraduate program before enrolling in the teacher training program. There is some research that indicates that educators with higher qualifications have better attitudes compared to educators with lower educational qualifications (Sharma, Ee, Desai, 2003). In general, educators in Australia and Canada had much positive attitudes compared to their counterparts in Singapore and Hong Kong. Research by Moberg, Zumberg and Renimaa (1997) may shed some light on this issue. These researchers compared attitudes of pre-service teachers from Estonia, Finland and the United States. They found that the Estonians were the most critical group; the Finns the least critical. They suggested that difference in attitudes could be attributed to the prevailing level of implementation of inclusion in those countries. Inclusion has been implemented in Australia and Canada for over two decades and it is possible that participants in this study themselves have received schooling in inclusive schools and have become more positive in their attitudes. On the other hand, the practice of including students with disabilities into mainstream school is a relatively new phenomenon in Hong Kong and Singapore. It is possible that prospective educators in the Eastern countries are reacting in a way most prospective educators in the Western countries reacted when the integration movement began, although this is just hypothesizing as we concede there is no empirical evidence to suggest Western pre-service educators reacted in this way in the 1980s.

Sentiments towards Persons with Disabilities

This study also measured comfort levels of pre-service teachers from the four countries by employing the IPD scale. The scale measures level of discomfort of individuals when interacting with people with disabilities. Pre-service teachers in Hong Kong and Australia had higher level of discomfort when interacting with people with disabilities compared to Canadian educators (as seen in Table 2). Furthermore, Singapore pre-service teachers appeared to have an even higher average level of discomfort than seen in the Australian and Hong Kong pre-service teachers (Table 2). It is difficult to explain these findings. Past research has indicated that contact with persons with disabilities tends to reduce discomfort levels of respondents (Gething, Wheeler, Furnham, Hudek-Knezevic, Kunpf, McKee & Sellick, 1997). Demographic data gathered on the questionnaire indicates that Canadian educators have had such contacts far more frequently than their counterparts in Australia, Hong Kong, and Singapore (Table 5 below) which might explain the difference. Alternatively, it could be that completely different variables contributed to different degree of discomforts in educators in four countries. If the study compared the sentiments of educators from Canada, Hong Kong, and Singapore only then one may conclude that different socio-political and cultural factors could explain difference in the results. However, relatively similar socio-political and ethnic background of participants from Australia and Canada make it difficult to draw such conclusions.

Table 5
Frequency of contact with children with Special Needs

Hongkong 7.9%	Canada 52.2%	Singapore 19.4%	Australia 23.5%
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Inclusion of students with disabilities could be perceived as imposing additional demands on teachers and may cause a high degree of concern and anxiety among them (References). In this study we found participants in Hong Kong and Singapore were significantly more concerned when compared to their counterparts in Australia and Canada. An overview of schooling system in Hong Kong may explain these findings for that country. According to Luk (2005) *The schooling system in Hong Kong is very competitive and academic. Students are allocated to primary one through a complicated system of marks allocation which involves factors like father/mother being alumni of schools, sibling studying in the same*

school, similar religious background etc. (p. 92). It is anticipated that teachers in such a system will be under increased pressure to maintain high academic standards and they may see inclusion of children with disabilities as an *extra burden*.

Conclusion

This was the first multi-national comparative study to explore prospective teachers' attitudes toward inclusion, concerns about inclusion and sentiments toward persons with disabilities. We have found some similarities and differences on all four groups of prospective educators from Australia, Canada, Hong Kong and Singapore have identified the major concerns of pre-service teachers. While we have endeavored to speculate reasons for some of the differences, further research is warranted to provide firm answers to explain them. Some of the questions raised in this study will be answered in our forthcoming studies.

Clearly, there are significant differences in almost all areas under examination between prospective educators in the Eastern countries of Hong Kong and Singapore and the Western educators in Canada and Australia. The Western prospective educators were clearly more positive on practically every measure. This raises the question: could the differences be the result of cultural attitudes towards people with disabilities with those in Asian countries being less accepting or understanding than those in the Western countries? This question is beyond the scope of this study but seems to be one worth investigating.

These initial findings have important implications for teacher educators in Australia, Hong Kong, and Singapore, if not in Canada as well. Past research indicates that negative attitudes toward persons with disabilities may lead to low expectations of persons with disabilities (Wilczenski, 1993). This in turn can lead to reduced learning opportunities for children with disabilities (Forlin, Tait, Carroll & Jobling, 1999). Moberg *et al.* (1997) also suggest that the more negatively (not teachable, dependent, unpleasant) a student is viewed by prospective teachers the more segregated an environment they recommend for the child. It would, therefore, be imperative to develop strategies to target such attitudes. The results of this study indicate that this might be particularly important in Eastern countries where stronger cultural biases against people with disabilities are seemingly evident.

One innovative method to change pre-service educators attitudes in a positive direction was proposed by Carrington and Brownlee (2001). In their qualitative study they used a teaching assistant with cerebral palsy during the training of pre-service teachers. The teaching assistant interacted with students in both small and large group tutorial discussions throughout the semester. They found that this resulted in a significant improvement of pre-service teachers' attitudes toward persons with disabilities after the completion of the course. Similarly, the involvement of students with intellectual disabilities in on campus tutorials has also been found to break down many of the myths that pre-service teachers hold about the expectations of these students (Forlin, 2003). It would appear that such a strategy is not only important but necessary in countries where pre-service educators are less likely to come in contact with persons with disabilities during their school years. This seems to be true in case of participants from Singapore and Hong Kong and to some extent for educators from Australia.

What is clearly important is that pre-service teacher training must consider the attitudes, beliefs and concerns of teachers in training and ensure that their courses provide the most appropriate preparation to better enable them to be prepared for inclusive education. This study has focused on the attitudes of pre-service teachers prior to their involvement in university training on inclusive education. In future studies, we will report how participation in a university program on special education impacted on these participants' attitudes, concerns and comfort levels.

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